

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments filed August 11, 2011 have been fully considered but they are not persuasive.

The Applicant provides citations to the specification in order to overcome the 35 USC 112, 1<sup>st</sup> paragraph rejection of claims 6-13. However, the Examiner does not find this persuasive for the following reasons. The rejection is made because the claims now read that the excitation interval and/or the observation interval are adjustable to match the resonant frequency of the marker. The specification states, as previously cited in the rejection, "the excitation interval or the observation interval can be adjusted to match the characteristics of the marker. Thus, the length of excitation interval or observation interval is programmable (or automated) in the receiver 208 in order to optimize the sensing system 100 (see lines 20-23 on page 13 of the originally filed specification)." Therefore, the specification teaches that these two intervals are adjustable to optimize the system or to match characteristics of the marker (such as the ring time of the marker - based on the next citation from page 17). Furthermore, on page 17, at lines 18-22, "Additionally, the receiver 208 may be adapted to the ring time of the marker. Various marker designs may have varying ring times... Because of this, it may be advantageous to adjust the excitation pulse interval and the observation interval." Therefore, this portion of the specification states that the excitation interval and/or the observation interval are adjustable to coordinate with a ring time of the marker.

The Applicant cites page 15 of the specification as teaching this subject matter. However, these portions of the specification state, "the excitation source has an adjustable frequency...", "The excitation source can then provide an exciting pulse at a frequency that is closely matches to the resonant frequency of the marker." Clearly, this teaches that the frequency can be adjusted to match the resonant frequency of the marker, but not that the excitation interval and/or the observation interval are adjustable to match the resonant frequency – as claimed.

Again, the Examiner cannot find an instance in which "said excitation *interval* and/or observation *interval* can be automatically adjusted in said receiver to match a resonant *frequency* of said marker." The excitation interval and observation interval are intervals and therefore relate to a time period, rather than a particular frequency.

For at least the reasons above, the 35 USC 112 rejection of claims 6-13 still stand and are repeated below.

The Double Patenting rejections are overcome pending the approval of the Terminal Disclaimers filed on August 11, 2011. As such, they are not repeated in this Office Action.

Regarding the 35 USC 103 rejection of claim 16, the Applicant states, "Without agreeing to the Office Action's characterization of the cited art, ..., applicants adopt this characterization of Dimmer and respectfully argue that the object identification system with adaptive transceivers of Rodgers is not relevant to how the generator is aware of

the specific frequency needed." And also that "the failure of the prior art to even recognize the problem of a second frequency determination in a single transceiver is evidence of non-obviousness." The Examiner respectfully disagrees with both of these arguments. The rejection stated, "Dimmer fails to explain how the generator is aware of the specific frequency needed." Dimmer states that "The pulsed source generator is adjustable to generate a pulsed magnetic field having a waveform that contains energy at selected frequencies that substantially match the resonant frequency of the specifically tuned marker assembly." However, Dimmer does not state whether these selected frequencies are selected manually or automatically. Rodger teaches a system and methods in which transceiver communication is attained by (a) transmitting from a first transmitter a first frequency for a first duration; (b) after lapse of the first duration, receiving via a first receiver a response signal from a resonant circuit; (c) determining a second frequency from the received response signal (i.e., determining the resonant frequency of the resonant circuit); and (d) performing transceiver communication using the second frequency (i.e., retransmitting using an optimized frequency based on the resonant frequency of the resonant circuit). Therefore, Rodgers teaches a method and system that could allow Dimmer to automatically tune the excitation signal to the frequency of the marker. As such, the system of Rodgers is relevant to the rejection and to the prior art used in the rejection and is found to be obvious.

For at least the reasons above, the rejection of claim 16 is maintained and repeated below.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 6-13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The Applicant has amended claims 6 and 12 by removing "the characteristics" and replacing this with "a resonant frequency." Furthermore, claim 9 has added "to match a resonant frequency of the marker." The specification states that "the excitation interval or the observation interval can be adjusted to match the characteristics of the marker. Thus, the length of excitation interval or observation interval is programmable (or automated) in the receiver 208 in order to optimize the sensing system 100 (*see* lines 20-23 on page 13 of the originally filed specification)." Furthermore, on page 17, at lines 18-22, "Additionally, the receiver 208 may be adapted to the ring time of the marker. Various marker designs may have varying ring times... Because of this, it may be advantageous to adjust the excitation pulse interval and the observation interval."

The claims state that the excitation interval and/or the observation interval are matched to the resonant frequency. The Examiner cannot find an instance in which "said excitation interval and/or observation interval can be automatically adjusted in said

receiver to match *a resonant frequency* of said marker." The excitation interval and observation interval are intervals and therefore relate to a time period, rather than a particular frequency.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dimmer (US Patent Pub. No. 2003/0122653) in view of Rodgers et al. (US Patent No. 6,362,737) - herein referred to as Rodgers. Dimmer discloses a system for excitation of a leadless miniature marker. The system includes a source (*see* paragraph 69 and Figure 3). "The pulsed source generator... is adjustable to generate a pulsed magnetic field having a waveform that contains energy at selected frequencies that substantially match the resonant frequency of the specifically tuned marker assembly (*see* paragraph 28 – i.e., an excitation source having a tunable frequency). "When the marker assembly is excited by the magnetic field, the signal element generates the response marker signal containing frequency components centered at the marker's resonant frequency (*see* paragraph 28)." Dimmer includes a sensing array as seen in Figure 3 (*see* "Sensors mounted on reference frame" and numerals 16 and 26). The sensing coils provide an output which then passes through pre-amplifiers and analog-to-digital

converters to the signal processing device, which contains at least one receiver, as is labeled by Dimmer (see "Signal Processing Device" of Figure 3). However, the Examiner notes that the entire signal processing device is being interpreted as the receiver, not just the rectangles labeled "Receiver" in Figure 3. In paragraph 28, Dimmer states "the pulsed source generator 18, in one embodiment, is adjustable to generate a pulsed magnetic field 20 having a waveform that contains energy at selected frequencies that substantially match the resonant frequency of the specifically tuned marker assembly 14." However, Dimmer fails to explain how the generator is aware of the specific frequency needed. Rodgers teaches an object identification system with adaptive transceivers. "A monitor includes a first transmitter, a first receiver and a processor (see lines 3-4 of the Abstract)." "The processor performs a method for performing transceiver communication that includes the steps of: (a) transmitting from the first transmitter a first frequency for a first duration; (b) after lapse of the first duration, receiving via the first receiver a response signal from at least one of the resonant circuits; (c) determining a second frequency from the received response signal; and (d) performing transceiver communication using the second frequency (see lines 6-14 of the Abstract)." It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the specifics of a second frequency determination for communication, as taught by Rodgers, with the system of Dimmer in order to "establish communication with a single transceiver at a frequency better suited for ... conducting an interrogation protocol for identifying the transceiver... (see the last 6 lines of the Abstract)."

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES KISH whose telephone number is (571)272-5554. The examiner can normally be reached on 8:30 - 5:00 ~ Mon. - Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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/James Kish/  
Primary Examiner, Art Unit 3737